REMARKS

Applicant respectfully requests the Examiner to reconsider the claims in view of the following remarks.

Claims 1-20 and 24-29 are pending in the application. Claims 1-20 and 24-29 are rejected.

Applicant's attorney would like to thank Examiner Brier for the courtesy extended to Applicant's attorney during the telephone interview on September 15, 2005. Obviousness rejections of independent Claims 1, 8, and 15 of the Office Action were discussed. Applicant's admitted prior art was discussed. With regard to the Applicant's admitted prior art, it was agreed that the admitted prior art does not indicate that two-dimensional scene graph data is stored in a conventional three-dimensional graphics circuit board, but instead indicates that three-dimensional data is stored in a three-dimensional graphics circuit board. Furthermore, the claimed invention was discussed in view of the Jazz article (identified below) and in view of the Applicant's admitted prior art. A specific application to air traffic control systems was discussed in view of dependent claims 3-5, 10-12, 17, and 18.

As an initial matter, Applicant notes that an Information Disclosure Statement (IDS) filed June 16, 2006 has not yet been considered by the Examiner. Applicant respectfully requests that the Examiner consider the art cited in the IDS filed June 16, 2006, and return an initialed SB/08 form.

The Rejections under 35 U.S.C. §103(a)

The Examiner rejects Claims 1-20 and 24-29 under 35 U.S.C. §103(a) as being unpatentable over an article entitled "Jazz: An Extensible Zoomable User Interface Graphics Toolkit," hereafter referred to as the Jazz article, in view of the Applicant's admitted prior art

pertaining to three-dimensional graphics circuit cards. The Examiner recognizes that the Jazz article does not teach use of the claimed three-dimensional graphics circuit module to render images associated with two-dimensional scene graphs. In order to teach the general use of three-dimensional graphics circuit modules, the Examiner uses the Applicant's admitted prior art in the specification. The Examiner concludes that "...one of ordinary skill in the art of displaying information such as air traffic control information will need to make the monitor 38e display updates quickly and one way of doing this will be to use the three-dimensional graphics circuit module to render and display the two-dimensional object defined by the scene graph onto the monitor."

As the Examiner is aware, and as found in MPEP §2142, in order to establish a prima facie case of obviousness "...the prior art reference (or prior art references when combined) must teach or suggest all the claim limitations." Applicant respectfully submits that the Examiner has not met this burden in order to establish prima facie obviousness.

Applicant submits that Claim 1 is patentably distinct over the Jazz article, whether taken alone or in combination with the Applicant's admitted prior art, since the cited references neither describe nor suggest "...generating scene graph data ...including at least one two-dimensional object; *storing the scene graph data in a three-dimensional graphics circuit module...;generating a scene graph display command....associated with the at least one two-dimensional object; interpreting the scene graph display command with the three-dimensional graphics circuit module; and displaying at least one two-dimensional image on the graphical display with the three-dimensional graphics circuit module, wherein the at least one two-dimensional image is associated with the at least one two-dimensional object*," as set forth in Claim 1.

With this particular arrangement, the present invention employs a *three-dimensional graphics circuit module*. The claimed three-dimensional graphics circuit module has certain claimed characteristics, including a local processor, and is operable to store two-dimensional

scene graph data, to interpret a two-dimensional scene graph display command, and to display a two-dimensional graphics object accordingly. Applicant submits that the references used by the Examiner do not contemplate use of the three-dimensional graphics circuit module to store scene graph data including a two-dimensional object, to interpret a scene graph display command associated with the two-dimensional object, and to display the two-dimensional object as claimed.

In contrast, the Jazz article uses scene graphs to render two-dimensional images on a computer display, but in an entirely different way than the present invention. The Jazz article does not use two-dimensional scene graph data stored in a three-dimensional graphics circuit module to generate the display. As recognized by the Examiner, the display in the Jazz article is instead rendered by the computer central processing unit (CPU) via conventional Java2D software. As a result, and as stated in a Response filed February 27, 2006 by the Applicant, the rendering and general computer operation described by the Jazz article is necessarily *much slower* than that of the present invention. The Examiner apparently uses this statement by the Applicant in order to imply that more rapid rendering of two-dimensional objects is an obvious desire. However, while the conventional rendering of two-dimensional objects provided by the Jazz article is necessarily must slower than that provided by the claimed invention, for most applications, including most air traffic control applications, the conventional rendering provided by conventional air traffic control systems, or alternatively, by the Jazz article, has adequate speed when rendering two-dimensional display objects. Still, the rendering of two-dimensional objects by the present invention is much faster, a characteristic that can be desirable, for example, in air traffic control systems used to control high air traffic densities.

It should be apparent that conventional three-dimensional scene graph display commands used with a conventional three-dimensional graphics circuit card must be changed in order to provide two-dimensional scene graph display commands. As described, for example, at page 9, lines 24-28, of the specification, in conjunction with FIG. 2, it is stated:

> It should be appreciated that the software application 32 must be able to generate 2D scene graph display commands in accordance with the present invention. It should still further be appreciated that the API 38a must be able to receive and transform the 2D scene graph display commands into 2D scene graph data that can be interpreted by the 3DGC 38c to provide 2D images on the monitor.

Therefore, the scene graphs data provided by the Jazz article cannot be stored in and interpreted by a conventional three-dimensional graphics circuit card.

Applicant submits that Applicant's admitted prior art fails to overcome the above deficiency in the Jazz article. Applicant's admitted prior art merely describes conventional three-dimensional graphics circuit cards, which are used to render *three-dimensional display objects* associated with three-dimensional scene graphs.

The Examiner asserts: "[a]pplicant's admission of the prior art describes a graphics circuit module which interprets the scene graph display command to interpret the scene graph into a graphical image that may be displayed on the monitor." However, Applicant submits that the Examiner has failed to properly characterize Applicant's admission of the prior art. As discussed in the above-described telephone interview summary, Applicant's patent application discusses use of a three-dimensional graphics circuit card store three-dimension scene graph data and to render three-dimensional images associated with the three-dimensional scene graph data, not two-dimensional images associated with a two-dimensional scene graph data as claimed. See, for example, the specification at page 7, lines 8-26.

As the Examiner is also aware, and as found in MPEP §2142, in order to establish a prima facie case of obviousness "...there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." Applicant respectfully submits that the Examiner has not met this burden in order to establish prima facie obviousness.

Applicant submits that rendering of two-dimensional object by conventional means has been sufficiently fast for most applications, including, for example, word processor applications, and also including conventional air traffic control systems. Thus, one of ordinary skill in the art would not be motivated to look for another, faster, means to render two-dimensional objects.

Applicant also submits that the claimed invention and the Jazz article attempt to solve different problems. Therefore, one of ordinary skill in the art and having the Jazz article who is faced with the problems sought to be solved by the present invention, would not look to the Applicant's admitted prior art for a solution. The present invention attempts to render two-dimensional images faster than is possible in the prior art. In contrast, the Jazz article identifies that software "...classes tend to be complex and have large numbers of methods, and the functionality provided by each class is hard to reuse in new widgets." [page 171, right hand column] The Jazz article also attempts to provide "Zoomable User Interfaces (ZUIs), which use zooming as a principal method of navigation." [page 172, left hand column] Therefore, the Jazz article does not attempt to provide faster rendering of two-dimensional graphics.

As the Examiner is also aware, and as found in MPEP §2145XA, in order to rebut a prima facie case of obviousness "Applicants may argue that the examiner's conclusion of obviousness is based on improper hindsight reasoning."

Applicant submits that the Examiner is using impermissible hindsight by suggesting use of a three-dimensional graphics circuit module to render a two-dimensional display object associated with a two-dimensional scene graph, when such use has not been suggested in the Jazz article or in the Applicant's admitted prior art, and when such a use was not contemplated or within the general knowledge one of ordinary skill in the art at the time of the invention. Applicant does not agree that such use would be obvious to one of ordinary skill in the art, since use of a three-dimensional circuit module to render a three-dimensional display object associated with a three-dimensional scene graph is the only way in which a conventional three-dimensional

graphics circuit card has conventionally been used and is the only way in which it is described by the Applicant's as prior art, or elsewhere.

The three-dimensional graphics circuit circuit card was originally developed, and is used, to receive three-dimensional scene graph display commands and to render complex three-dimensional objects on a display, objects, which, for rendering, require a large amount of processing, particularly as the three-dimensional objects are rotated or otherwise moved on the display. Applicant submits that it would not have been obvious to render simpler two-dimensional objects using a conventional three-dimensional graphics circuit circuit card, objects, which, for rendering, require a smaller amount of processing, and which can be rendered with sufficient speed in most applications with a central processing unit (CPU) and without using a conventional three-dimensional graphics circuit card. In fact, Applicant submits that such an arrangement would be counterintuitive, since that is not the above-described intended application of a three-dimensional graphics circuit card.

Applicant further submits that Applicant's admitted prior art specifically teaches away from the arrangement suggested by the Examiner. Since conventional three-dimensional graphics circuit cards are described as being conventionally used only to render three-dimensional display objects associated with three-dimensional scene graphs, Applicant's admitted prior art teaches away from the use of conventional three-dimensional graphics circuit card to render two-dimensional displays objects associated with two-dimensional scene graphs.

Applicant further submits that rendering of two-dimensional display objects associated with a two-dimensional scene graph using a three-dimensional circuit card provides an unexpected advantage, not previously contemplated. As taught the Jazz article, two-dimensional display objects associated with a two-dimensional scene graph have been rendered by a computer CPU (as opposed to a local processor on a graphics circuit card). This arrangement provides rendering with sufficiently fast speed in most applications. Faster rendering of the two-dimensional display objects associated with a two-dimensional scene graph by a three-

dimensional circuit card would not be obvious to one of ordinary skill in the art, and would be an unexpected outcome of such a use to the three-dimensional graphics circuit card.

Applicant further submits that the faster rendering of two-dimensional objects provided by the claimed rendering of two-dimensional display objects with a three-dimensional graphics circuit module solves a long felt but unresolved need in some particular applications, for example, in air traffic control, where particularly rapid rendering of two-dimensional objects is becoming particularly desirable as air traffic density increases.

Applicant further submits that the above-described unresolved need has not before been recognized by others, and that Applicant first identified the need. It should be apparent that two-dimensional displays, provided without use of scene graphs and without use of three-dimensional graphics circuit modules, have been rendered with sufficiently fast speed in a wide variety of applications. It should also be apparent that conventional air traffic control displays have, for many years, not used two-dimensional scene graphs and have not used three-dimensional graphics circuit modules. Air traffic control displays have provided good air traffic control throughout the world. Applicant first identified a need for a faster rendering of two-dimensional objects, in particular in air traffic control displays, and in particular as the air traffic density increases.

In view of the above, Applicant submits that Claim 1 is patentably distinct over the Jazz article, whether taken alone or in combination with Applicant's admitted prior art.

Claims 2-7, 24, and 25 depend from and thus include the limitations of Claim 1. Thus, Applicant submits that Claims 2-7, 24, and 25 are patentably distinct over the cited references at least for the reasons discussed above in conjunction with Claim 1.

Applicant submits that Claim 3 is further patentably distinct over the Jazz article, whether taken alone or in combination with Applicant's admitted prior art, since the cited references

neither describe nor suggest "... *object data is provided by a radar system and is associated with at least one of an aircraft and a geographic feature*," as set forth in Claim 3. As described above, the Applicant was the first to recognize the need for rendering of two-dimensional objects in a way faster than provided, for example, in conventional air traffic control systems, which use neither a scene graph nor a three-dimensional graphics circuit card. As described above, conventional applications that render two-dimensional objects, with or without use of two-dimensional scene graphs, can do so with sufficient speed by rendering *with a CPU* (as in the Jazz article), and without use of a three-dimensional graphics circuit module. The present invention provides a solution to a problem not previously recognized by others, at least in the art of air traffic control systems.

For reasons discussed above in conjunction with Claims 1 and 3, Applicant submits that Claim 4 is further patentably distinct over the Jazz article, whether taken alone or in combination with Applicant's admitted prior art, since the cited references neither describe nor suggest "... *the at least one two-dimensional object represents an aircraft*," as set forth in Claim 4.

For reasons discussed above in conjunction with Claims 1 and 3, Applicant submits that Claim 5 is further patentably distinct over the Jazz article, whether taken alone or in combination with Applicant's admitted prior art, since the cited references neither describe nor suggest "... *generating the scene graph data including at least one of a first two-dimensional scene graph data portion representing a land geography, and a second two-dimensional scene graph data portion representing one or more aircraft*," as set forth in Claim 4.

For reasons discussed above in conjunction with Claim 1, Applicant submits that Claim 25 is further patentably distinct over the Jazz article, whether taken alone or in combination with Applicant's admitted prior art, since the cited references neither describe nor suggest "... *the three-dimensional graphics circuit module is adapted to generate the entire graphical display via the local processor*," as set forth in Claim 25.

For reasons described above in conjunction with Claim 1, Applicant submits that Claim 8 is patentably distinct over the Jazz article, whether taken alone or in combination with the Applicant's admitted prior art, since the cited references neither describe nor suggest "...instructions for generating scene graph data... including at least one two-dimensional object; *instructions for storing the scene graph data in a three-dimensional graphics circuit module*...; instructions for generating a scene graph display command associated with the at least one two-dimensional object; *instructions for interpreting the scene graph display command with the three-dimensional graphics circuit module; and instructions for displaying at least one two-dimensional image on the graphical display with the three-dimensional graphics circuit module, wherein the at least one two-dimensional image is associated with the at least one two-dimensional object*," as set forth in Claim 8.

Claims 9-14, 26, and 27 depend from and thus include the limitations of Claim 8. Thus, Applicant submits that Claims 9-14, 26, and 27 are patentably distinct over the cited references at least for the reasons discussed above in conjunction with Claim 8.

For reasons discussed above in conjunction with Claims 1 and 3, Applicant submits that Claim 10 is further patentably distinct over the Jazz article, whether taken alone or in combination with Applicant's admitted prior art, since the cited references neither describe nor suggest "... *object data is provided by a radar system and is associated with at least one of an aircraft and a geographic feature*," as set forth in Claim 10.

For reasons discussed above in conjunction with Claims 1 and 3, Applicant submits that Claim 11 is further patentably distinct over the Jazz article, whether taken alone or in combination with Applicant's admitted prior art, since the cited references neither describe nor suggest "... *the at least one two-dimensional object represents an aircraft*," as set forth in Claim 11.

For reasons discussed above in conjunction with Claims 1 and 3, Applicant submits that Claim 12 is further patentably distinct over the Jazz article, whether taken alone or in combination with Applicant's admitted prior art, since the cited references neither describe nor suggest "... *generating the scene graph data including at least one of a first two-dimensional scene graph data portion representing a land geography, and a second two-dimensional scene graph data portion representing one or more aircraft*," as set forth in Claim 12.

For reasons described above in conjunction with Claim 1, Applicant submits that Claim 15 is patentably distinct over the Jazz article, whether taken alone or in combination with the Applicant's admitted prior art, since the cited references neither describe nor suggest "... a display processor having *a scene graph display command generator for generating a scene graph display command associated with scene graph data including at least one two-dimensional object*; and a three-dimensional graphics circuit module coupled to the display processor, wherein the three-dimensional graphics circuit module has a local processor, and wherein the three-dimensional graphics circuit module is adapted to generate the graphical display via the local processor, wherein the three-dimensional graphics circuit module is adapted to store the scene graph data, and wherein *the three-dimensional graphics circuit module is adapted to interpret the scene graph display command, resulting in a display of at least one two-dimensional image on the graphical display, wherein the at least one two-dimensional image is associated with the at least one two-dimensional object*," as set forth in Claim 15.

For reasons discussed above in conjunction with Claim 1, Applicant submits that Claim 27 is further patentably distinct over the Jazz article, whether taken alone or in combination with Applicant's admitted prior art, since the cited references neither describe nor suggest "... *the three-dimensional graphics circuit module is adapted to generate the entire graphical display via the local processor*," as set forth in Claim 27.

Claims 16-20, 28, and 29 depend from and thus include the limitations of Claim 15. Thus, Applicant submits that Claims 16-20, 28, and 29 are patentably distinct over the cited references at least for the reasons discussed above in conjunction with Claim 15.

For reasons discussed above in conjunction with Claims 1 and 3, Applicant submits that Claim 17 is further patentably distinct over the Jazz article, whether taken alone or in combination with Applicant's admitted prior art, since the cited references neither describe nor suggest "... *object data is provided by a radar system and is associated with at least one of an aircraft and a geometric feature*," as set forth in Claim 17.

For reasons discussed above in conjunction with Claims 1 and 3, Applicant submits that Claim 18 is further patentably distinct over the Jazz article, whether taken alone or in combination with Applicant's admitted prior art, since the cited references neither describe nor suggest "... *the at least one two-dimensional object represents an aircraft*," as set forth in Claim 18.

For reasons discussed above in conjunction with Claim 1, Applicant submits that Claim 29 is further patentably distinct over the Jazz article, whether taken alone or in combination with Applicant's admitted prior art, since the cited references neither describe nor suggest "... *the three-dimensional graphics circuit module is adapted to generate the entire graphical display via the local processor*," as set forth in Claim 29.

In view of the above, Applicant submits that the rejection of Claims 1-20 and 24-29 - under 35 U.S.C. §103(a) should be removed.

The Examiner is respectfully invited to telephone the undersigning attorney if there are any questions regarding this Response or this application.

The Assistant Commissioner is hereby authorized to charge payment of any additional fees associated with this communication or credit any overpayment to Deposit Account No. 500845, including but not limited to, any charges for extensions of time under 37 C.F.R. §1.136.

Respectfully submitted,

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